

(No Model.)

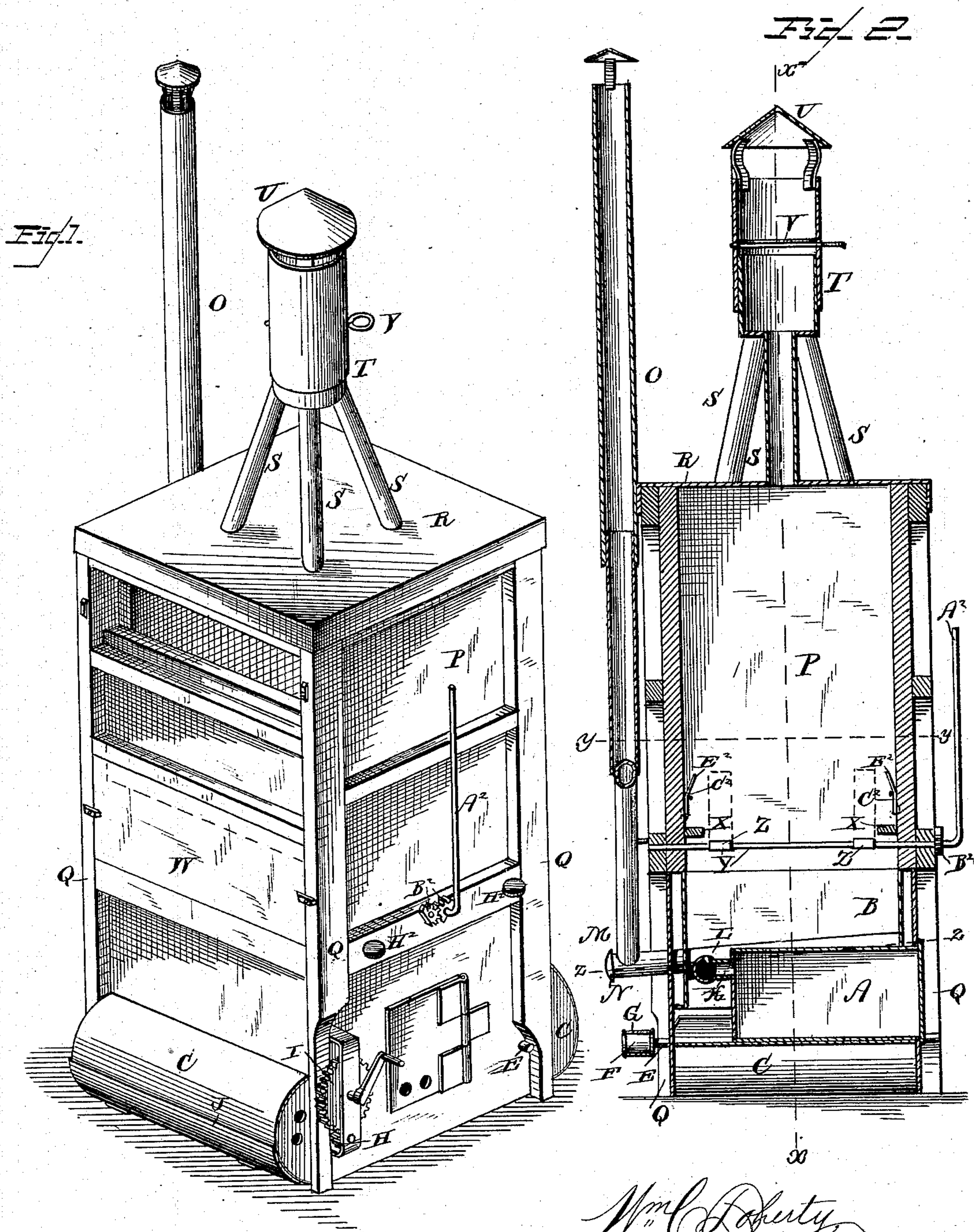
2 Sheets—Sheet 1.

W. C. DOHERTY.

FRUIT DRIER.

No. 277,013.

Patented May 8, 1883.



WITNESSES

F. L. Ourand

J. Reed Sittell

W. C. Doherty
INVENTOR

by C. Snow & Co.
Attorneys

(No Model.)

2 Sheets—Sheet 2.

W. C. DOHERTY

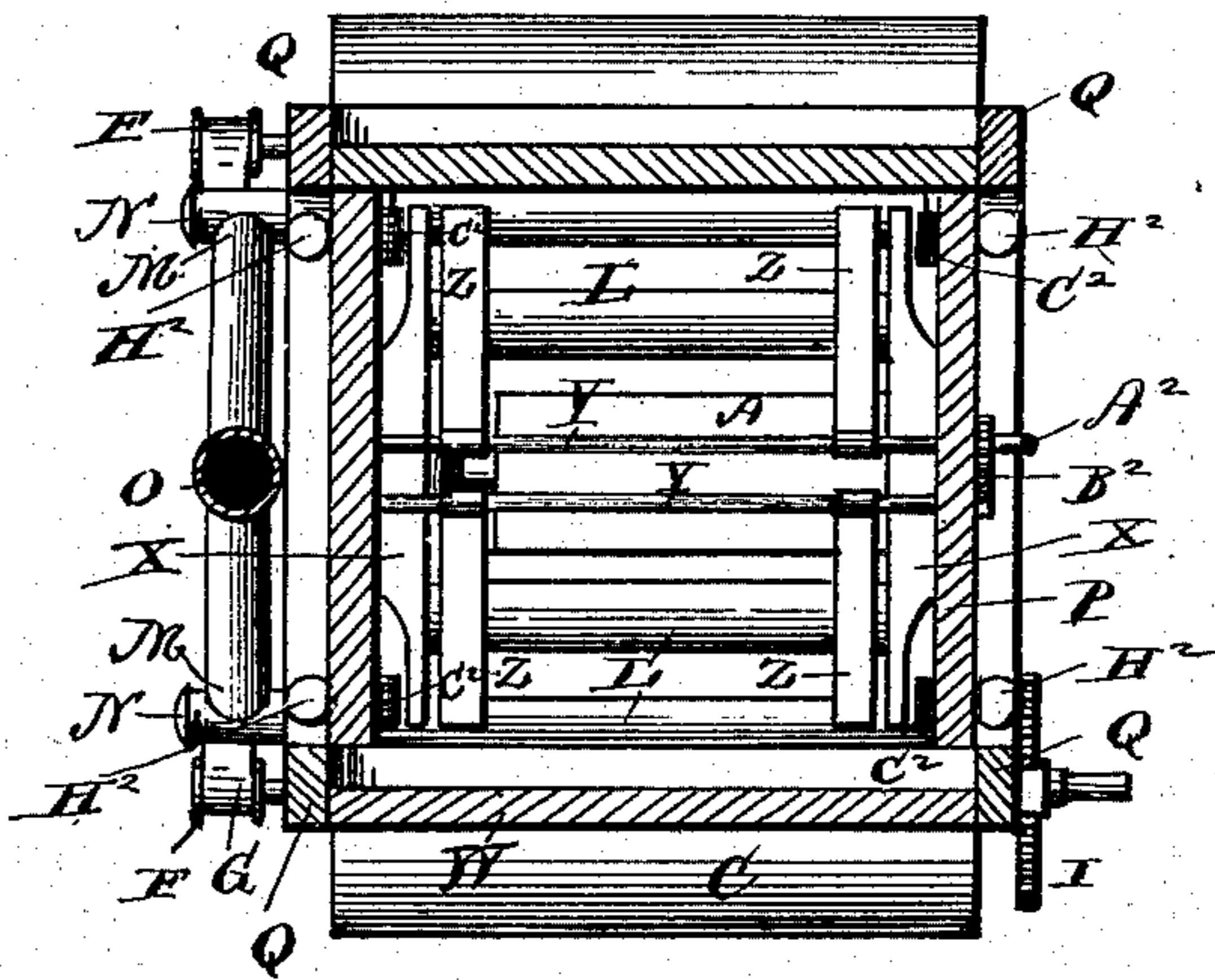
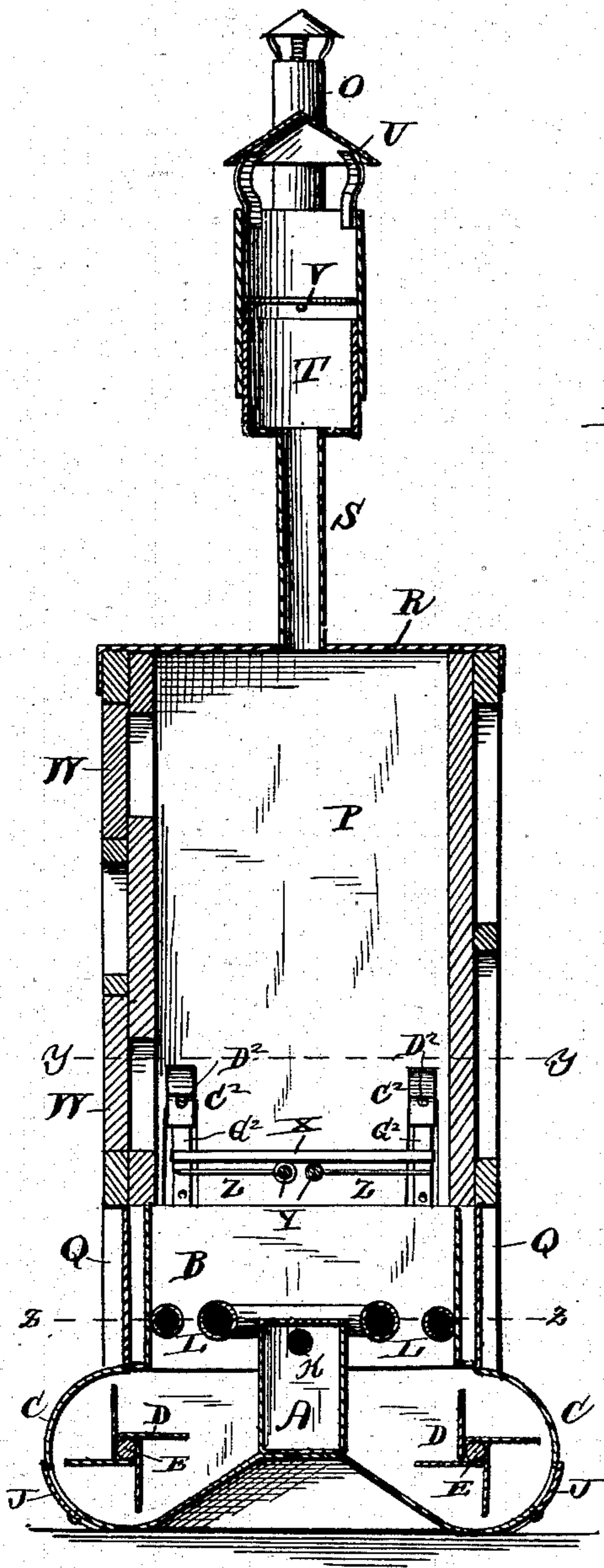
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Fig. 3

Fid 4



Fid 5

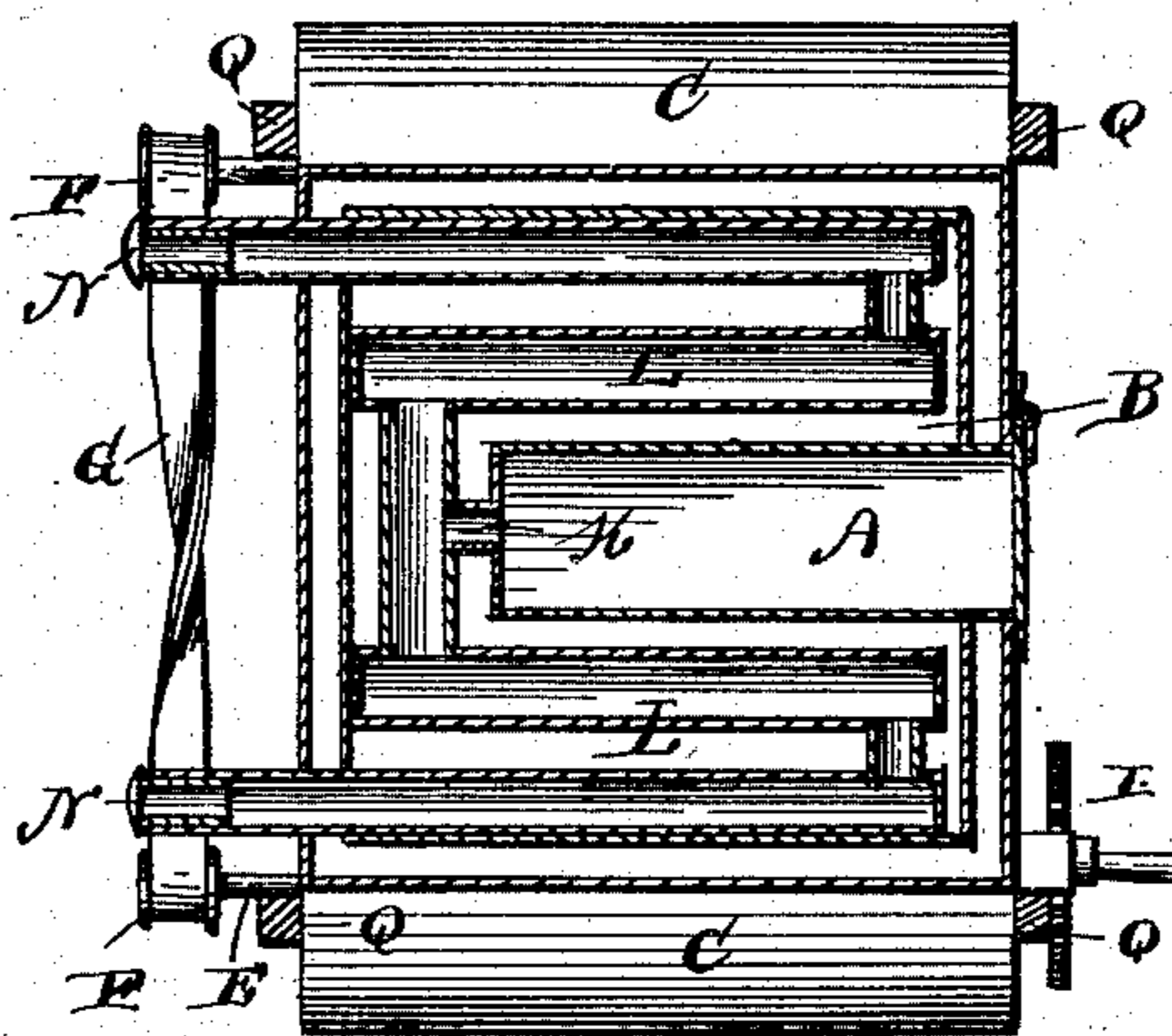


Fig. 6.

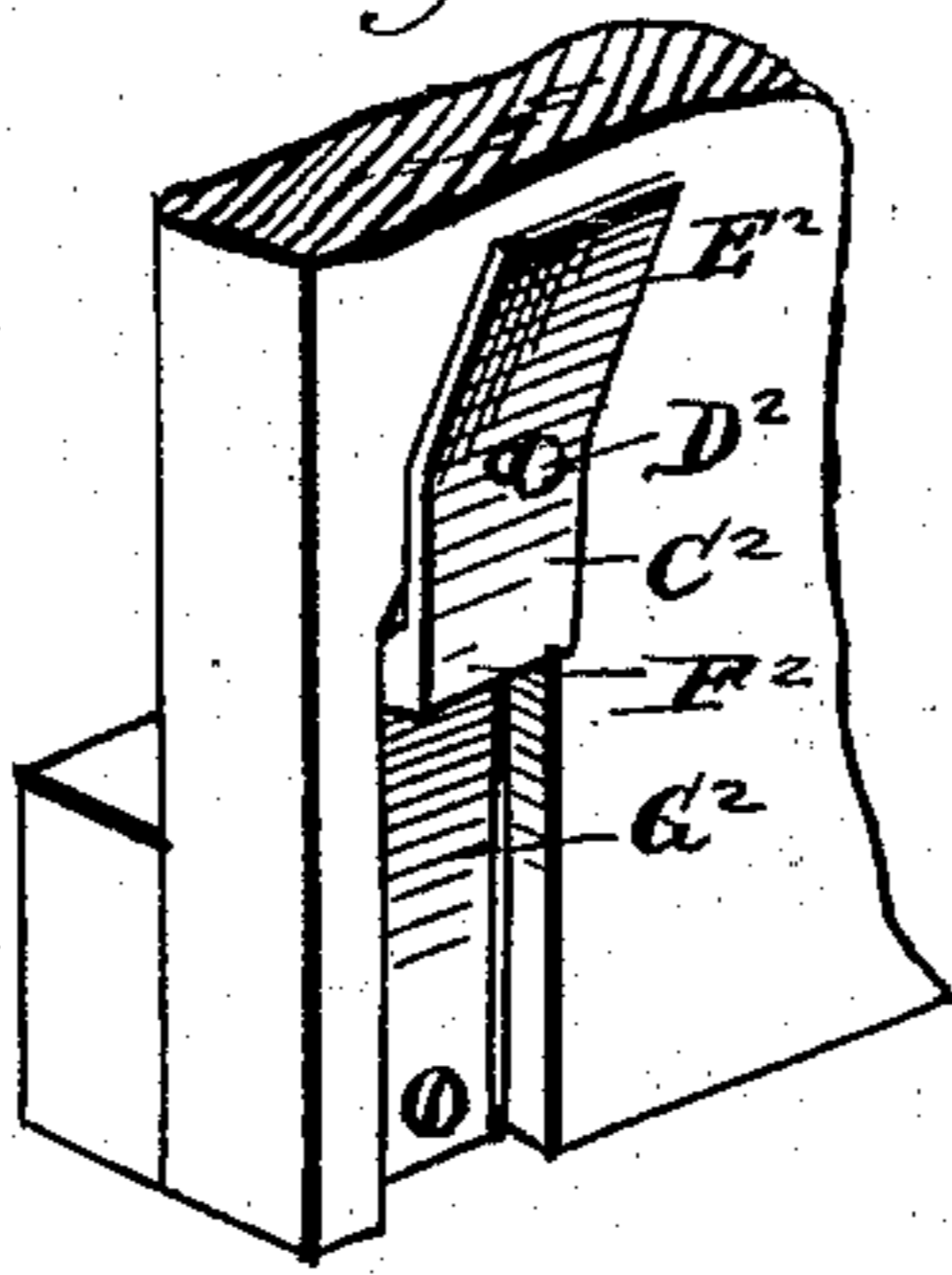
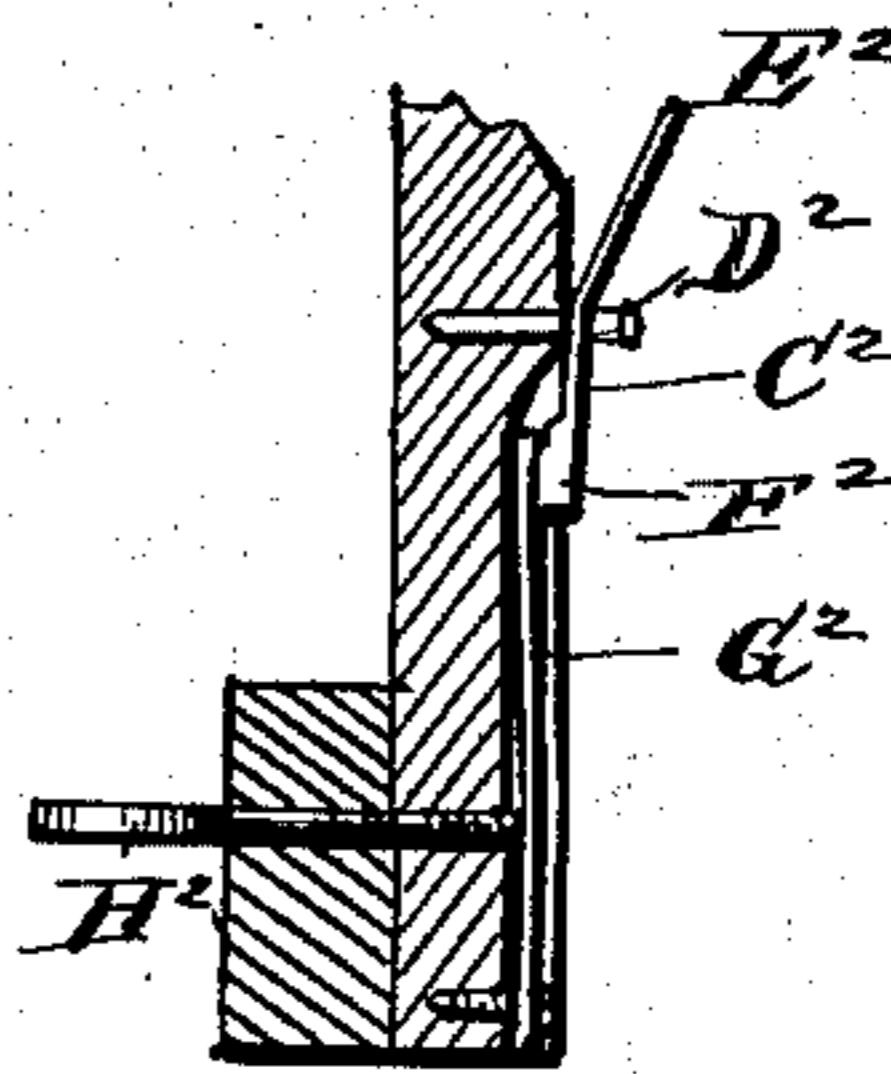


Fig. 1.



WITNESSES

F. L. Curran.

R. Sittell.

INVENTOR

W. C. Ooherty,
by C. A. Snow & Co. Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM C. DOHERTY, OF SACRAMENTO, CALIFORNIA.

FRUIT-DRIER.

SPECIFICATION forming part of Letters Patent No. 277,013, dated May 8, 1883.

Application filed January 31, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. DOHERTY, a citizen of the United States, residing at Sacramento, in the county of Sacramento and State of California, have invented a new and useful Fruit-Drier, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to driers for fruits of all kinds, vegetables, hops, and the like; and it consists in certain improvements in the construction of the same, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a perspective view of my improved fruit-drier. Fig. 2 is a vertical sectional view taken longitudinally through the furnace. Fig. 3 is a vertical sectional view on the line $x x$ in Fig. 2. Fig. 4 is a horizontal sectional view on the line $y y$ in Figs. 2 and 3. Fig. 5 is a horizontal sectional view on the line $z z$ in Figs. 2 and 3. Fig. 6 is a detail view, in perspective, of one of the catches for supporting the drying-trays and the adjacent parts of the casing; and Fig. 7 is a vertical sectional view of the same.

The same letters refer to the same parts in all the figures.

In the drawings, A designates a suitably-constructed furnace, surrounded by a chamber, B, which forms the lower part of the structure of my improved fruit-drier. The lower end of the casing, which forms the chamber, is bulged outwardly at both sides, as at C C, so as to accommodate a pair of revolving fans, D D, the shafts of which, E E, are mounted in the ends of the casing. The said shafts are provided at their rear ends with pulleys F F, connected by a belt or band, G, so that motion communicated to one of the shafts by means of the pinion H and gear-wheel I, by hand or any suitable power, shall be transmitted to the other. The bulging sides C of the casing have hinged doors J to regulate the supply of air.

The smoke-pipe K, which leads from the furnace A, has branches L L coiled through the chamber B and extending through the rear end of the latter, at which point the elbows M are provided with removable caps or lids N, which may be removed in order to remove the

soot from the pipes. Outside the chamber B the branch pipes again converge in the chimney O. By this construction the air supplied into the chamber B by the revolving fans is thoroughly heated before it ascends into the drier.

The lower part of the drier structure, comprising the parts which have just been described, may be constructed of brick, metal, or other fire-proof material, in any suitable manner. Upon this lower part is set the casing P, which, with the exception of the corner-posts Q, is to be constructed of matched lumber, in any suitable manner, so that it will retain the heat. This casing has a flat top plate, R, made of galvanized iron or other suitable sheet metal, which will serve to throw the heat back upon the contents of the drier. Said top plate has a number of upwardly-projecting pipes, S S, converging into a single pipe, T, having a cap or cowl, U, and provided with a damper, V. Through these pipes the heat and moisture will escape evenly from all parts of the drier—much more so than when only a single exit-pipe is provided.

Doors W W, through which the drying-trays may be inserted into and removed from the drier, are provided at or near the upper and lower ends of the casing P. The sides of the casing are provided, just below the lower door W, with cleats X X, to receive the lowermost tray when slid into or removed from the drier, as will be presently described. Just below the cleats X are two transverse shafts, Y Y, having arms Z Z, which project in opposite directions, as shown. One of the shafts is provided at its outer end with an arm or lever, A², by means of which it may be manipulated, and both of said shafts have half-gears, B² B², engaging each other, so that when one of the shafts is operated by means of the arm or lever A² the other one shall be simultaneously revolved in the opposite direction, and in such a manner as to throw the arms Z Z upwardly to the position shown in dotted lines in Fig. 2 of the drawings.

C² C² are catches, pivoted to pins or studs D² upon the sides of the casing a short distance above the cleats X. The said catches consist of flat plates, the upper ends of which are bent outwardly, as at E², and the lower ends of which are loaded with weights F²,

which serve to throw the upper ends automatically outward from the sides of the casing. To the sides of the casing, under the lower ends of the catches, are secured flat springs G^2 G^2 , which, by means of screws H^2 in the sides of the casing, may be made to force the lower ends of the catches outward from contact with said sides, thus throwing the upper ends of the catches back against the sides. Normally, however, the catches occupy the first position, with their upper ends out from the sides and the springs G^2 out of action. When they are in this position the drying-trays are to be inserted through the lower and removed through the upper door. When they are in the reverse position the trays may be inserted through the upper and removed at the lower door.

The operation will be readily understood. When the catches are in the first position the trays are slid in upon the cleats X and the shafts Y operated, the arms Z of which will lift the tray until it passes the catches C^2 . When the arms Z are lowered the tray is left supported upon said catches. By repeating the operation the first tray is raised by and supported upon the second one, and so on until a stack of trays is formed, when the uppermost one may be removed through the upper door. When the catches are in the reverse position, or rather when the springs G^2 are thrown into action, the trays may be inserted through the upper door. When the shafts Y are manipulated they will lift the stack of trays off the catches, the upper ends of which are then thrown back by the action of the springs, thus admitting of the passage of the lowermost tray, which, in passing, throws the catches back to their original position, intercepting the tray next to the bottom one, and allowing only the bottom one to pass down upon the cleats, from whence it may be readily removed through the lower door.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. In a fruit-drier, the furnace A and casing B , having bulging portions or chambers C adjoining the sides of the furnace, in combination with the shafts E , journaled in the ends of the casing, and carrying fans D , arranged to revolve within the chambers C , as set forth.

2. In a fruit-drier, the combination of the furnace A , the casing B , having bulging portions or chambers C adjoining the sides of the furnace, the fans D , arranged to revolve in the chambers C , the smoke-pipe K , having branches L coiled in the chamber B above the furnace, and the drier-casing resting upon the casing B , substantially as described.

3. The combination of the drier-case, the pivoted catches, having outwardly-bent upper ends and loaded lower ends, the springs adapted to bear against the lower ends of said catches, and the set-screws for throwing said springs into action, as set forth.

4. In a fruit-drier, the combination of the drier-case having doors near its upper and lower ends, the cleats below the lower door, the transverse shafts, having arms projecting in opposite directions, and mechanism for operating the said shafts, and the pivoted catches, having outwardly-bent upper ends and loaded lower ends, the springs adapted to bear against the said lower ends, and the set-screws for throwing the said springs into action, all arranged and operating substantially as and for the purpose herein set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM C. DOHERTY.

Witnesses:

P. J. HOPPER,
H. J. GOETHE.